RESOLUTION MATRIX FOR DRAFT 1
NASA-HDBK-1005, Space Mission Architecture Framework (SMAF) for NASA Robotic Space Missions

Date: 10/14/2020

Prepared By:

GSFC/David Richardsom

Comment No.	Date Comment Received	Center	Comment/Review Source(s) [Include Name/Phone No./ Mail Code]	Comment Section	Comments (Options: Concur, Non-concur with Rationale, and/or State Recommended Changes in "From/To" Format)			Comment Disposition (Accepted, Accepted w/Mods, Not Accepted, Noted)	Comment Disposition for Accepted w/Mod or Rationale if Not Accepted
					From (Current Text):	To (Proposed Text):	Rationale for Change or Non-concurrence:		
7	1/22/2020	GSFC	Jesse Leitner/301-286-2630/300	3.2	This section is for the most part straight out of NPR 7120.5, but it's really a bit out of line with what really should be of concern in SMA, which is why SMA sections will be pulled out of 7120.5 (and other engineering docs). I guess it can be left alone for now, but it doesn't really provide helpful guidance.		consistent with 7120.5 but not particularly helpful	Not Accepted	Alignment with 7120.5 is a design principle for this effort. Future efforts will consider deviation from 7120.5 as a design principle.

8		#REF!	#REF!	4.1			The term "digital engineering" (environments, tools, methods…) seems to be in vogue, but it is fundamentally misleading regarding the nature of what is intended, which is to first express information in a formal manner that supports more rigorous integration and analysis, and then to capture and manage this information in a technological form that is more amenable to automation in all aspects of its use. While it may be plausible to assume that readers understand this, an introductory explanation of the term would help. Preferable to this	Not Accepted	Agency needs to align behind common language. This effort should begin that one.
8a							would be a less fashionable term that better expresses the actual intent.		

| 33 | 1/23/2020 | GRC | Brian Morris 216-433-2736 MS 162-1 | 4.3.7 Enterprise Viewpoint | Table 1—SMAF Viewpoints and Work Products Soln-14 Software Management Plan | Table 1—SMAF Viewpoints and Work Products Soln-17 Software Requirements Mapping Matrix Soln-18 Software Classificaiton and Safety Critical Determination Soln-19 Software Cybersecurity Assessment Soln-20 Modeling and Simulation Criticality Assessment (NASA-STD-7009) Soln-21 Modeling and Simulation Credibility Assessment (NASA-STD-7009) Soln-22 Determine NASA-STD-1006 applicability Soln-46 Software Model and Simulation Data and Documentation, including the | There are additional Work Products to the ones I listed, but these should be included as a minimum. These items will direct others to perform some of the unlisted Work Products.

Note: Software Model and Simulation Data and Documentation, including the Verification, Validation, and Credibility Plan for Software Model and Simulation is important to include as well. These items can be found itn NPR 7150.2 | Accepted w/Mod | Future versions of handbook will be more comprehensive. |

| 33a | | | | | | Verification, Validation, and Credibility Plan for Software Model and Simulation.

Additional items that can be added as discussed in NPR 7150.2 Chapter 6:
Soln-23 Software Schedule.
Soln-24 Software Cost Estimate.
Soln-25 Software Configuration Management Plan.
Soln-26 Software Change Reports.
Soln-27 Software Test Plans.
Soln-28 Software Test Procedures.
Soln-29 Software Test Reports.
Soln-30 Software Version Description Reports.
Soln-31 Software Maintenance Plan. | | | |

33b						Soln-32 Software Assurance Plan(s). Soln-33 Software Safety Plan. Soln-34 Software Requirements Specification. Soln-35 Software Data Dictionary. Soln-36 Software and Interface Design Description (Architectural Design). Soln-37 Software Design Description. Soln-38 Software User's Manual. Soln-38 Records of Continuous Risk Management for Software. Soln-40 Software Measurement Analysis Results. Soln-41 Record of Software Engineering Trade-off Criteria & Assessments (make/buy decision).				

33c						Soln-42 Software Acceptance Criteria and Conditions. Soln-43 Software Status Reports. Soln-44 Programmer's/Developer's Manual. Soln-45 Software Reuse Report.			
34	1/24/2020	GRC	Richard Slywczak/216.433.3493	4.3.7			In this table, do we need to include a Safety/Hazard Assessment Plan (Payload Safety in addition to Range Safety) and Software Assurance Plan	Accepted w/Mod	Future versions of handbook will be more comprehensive.
45	1/24/2020	GRC	Richard Slywczak/216.433.3493	A.4.1.5			In the SMA Section, Quality Assurance is not addressed - topics like PQA and GMIPS should be addressed at this level.	Accepted w/Mod	Future versions of handbook will be more comprehensive.
46	1/22/2020	GSFC	Jesse Leitner/301-286-2630/300	A.4.1.5d	design guidelines	SMA processes	There are not really design guidelines that differ among mission clasess, nor are design guidelines under SMA	Accepted w/Mod	Future versions of handbook will be more comprehensive.

50	1/22/2020	GSFC	Jesse Leitner/301-286-2630/300	A.5.1	a compliant Safety and Mission Assurance … (MAIP) is	Mission Assurance Requirements commensurate with mission class (per NPR 8705.4 and Center policies) and compliant to Agency Directives are	This is too specifc and not how all proejcts implement SMA.	Accepted w/Mod	Future versions of handbook will be more comprehensive.
60		WSTF	Benjamin Greene/575-524-5761/RF	B2.2 Figure 18			Can legibility be improved?	Not Accepted	This was the best I could do with the source materials I had.
92		WSTF	Benjamin Greene/575-524-5761/RF	H.3		Define robotic space mission	Mission is defined; space mission is not defined, but most importantly, robotic space mission is not defined.	Accepted w/Mod	Future versions of handbook will be more comprehensive.

| 93 | 2/13/2020 | NESC | Cynthia Null/ 650-604-1260 | | | | This uses language that is not consistent with NASA NPRs for PM and SE. I often seems like is renaming ("viewpoint" for example) of current processes—although one goal is to take advantage of new digital processes. Does that mean that the NPRs will need to be rewritten to be consistent with this standard—NPR 7123 is just about to be completed after a long process—so will it be delayed or will this standard be out of phase for 5 plus years with NASA process requirement. I believe that 7120.5 is in process and has this been coordinated with that team. | Not Accepted | Alignment with 7120.5 is a design principle for this effort. Future efforts will consider deviation from 7120.5 as a design principle. |

| 94 | 2/13/2020 | NESC | Cynthia Null/ 650-604-1260 | | | | Second, although this is a mission architecture, it seems to completely miss that missions have to be designed within the capability of humans for their critical roles in such robotic missions-- scientists, and operators, as well as those that design, and integrate the hardware and software into flight ready missions. Mission operations includes hardware software needs but appears mute on the key role human play in the scientific endeavor—including science planning during the mission, and the key role operators in many capacities play in mission execution. Understanding how | Accepted w/Mod | Future versions of handbook will be more comprehensive. |

94a						to design for mission success to support human roles is not just asking for desirements. IF you do not made sure the architecture is designed to support the humans of humans, it will be difficult to meet the mission objectives.			